

## **LISTING OF THE CLAIMS**

**This listing of claims will replace all prior versions, and listings, of claims in the application:**

**1. - 4. (Canceled)**

**5. (Original)** A thermal processing apparatus for heating a substrate by irradiating flashlight to said substrate, comprising:

a plurality of lamp houses, each lamp house storing a plurality of bar-like flash lamps in such a state that a longitudinal direction of each of said plurality of flash lamps extends in a substantially horizontal direction, and that said plurality of flash lamps are arranged in parallel in a substantially horizontal direction that is substantially perpendicular to said longitudinal direction;

a plurality of chambers for storing a substrate, each chamber being disposed below each of said plurality of lamp houses; and

a transport robot for loading and unloading a substrate by advancing and retracting a transport arm with respect to each of said plurality of chambers, wherein;

all of said plurality of lamp houses are disposed such that a direction of substrate loading and unloading by said transport robot is substantially perpendicular to said longitudinal direction of said plurality of flash lamps.

**6. (Previously Presented)** The thermal processing apparatus according to claim 5, wherein

said plurality of lamp houses are three lamp houses, and

said three lamp houses are disposed 90° apart around said transport robot.

**7. (Previously Presented)** The thermal processing apparatus according to claim 6, wherein

said plurality of flash lamps are xenon flash lamps.

**8. - 11. (Canceled)**

**12. (Currently Amended)**    [[The]] A thermal processing apparatus for heating a substrate by irradiating flashlight to said substrate, comprising:

a plurality of lamp houses of a rectangular shape, each lamp house storing a plurality of bar-like flash lamps in such a state that a longitudinal direction of each of said plurality of flash lamps extends in a longitudinal direction of said rectangular shape, and that said plurality of flash lamps are arranged in parallel in a substantially horizontal direction that is substantially perpendicular to said longitudinal direction of said rectangular shape;

a plurality of chambers for storing a substrate, each chamber being disposed below each of said plurality of lamp houses; and

a transport robot for loading and unloading a substrate by advancing and retracting a transport arm with respect to each of said plurality of chambers, wherein:

all of said plurality of lamp houses are disposed such that a direction of substrate loading and unloading by said transport robot is substantially perpendicular to said longitudinal direction of said plurality of lamp houses.

**13. (Previously Presented)**    The thermal processing apparatus according to claim 12, wherein

said plurality lamp houses are three lamp houses, and  
said three lamp houses are disposed 90° apart around said transport robot.

**14. (Previously Presented)** The thermal processing apparatus according to claim 13, wherein

said plurality of flash lamps are xenon flash lamps.

**15. - 16. (Canceled)**

**17. (New)**    The thermal processing apparatus according to claim 5, wherein

each of said plurality of chambers has a cylindrical shape and has a disk-like heating plate on which a substrate is mounted and preheated prior to irradiation of flashlight, and

the length of each of said plurality of flash lamps is greater than the outside diameter of a corresponding one of said plurality of chambers.

18. (New) The thermal processing apparatus according to claim 17, wherein the length of each of said plurality of flash lamps is not less than two times the inside dimension of a corresponding one of said plurality of chambers.

19. (New) The thermal processing apparatus according to claim 12, wherein each of said plurality of chambers has a cylindrical shape and has a disk-like heating plate on which a substrate is mounted and preheated prior to irradiation of flashlight, and

the length of said longitudinal direction of each of said plurality of lamp houses is greater than the outside diameter of a corresponding one of said plurality of chambers.

20. (New) The thermal processing apparatus according to claim 19, wherein the length of each of said plurality of lamp houses in said longitudinal direction is not less than two times the inside dimension of a corresponding one of said plurality of chambers.